1   A.   Ameritech itself calculated itself the remedy payments and supplied them to me. I

2   have no way to verify the accuracy of their calculations because Ameriteh never

3   submitted to me their program or spreadsheet with their formulas (i.e., Ameritech

4   has not shown its mathematical work in this exercise.). With this caveat, I am

5   working with unverified results calculated by Ameritech.

6   Q.   **PLEASE EXPLAIN HOW YOU CALCULATE REMEDIES UNDER THE**
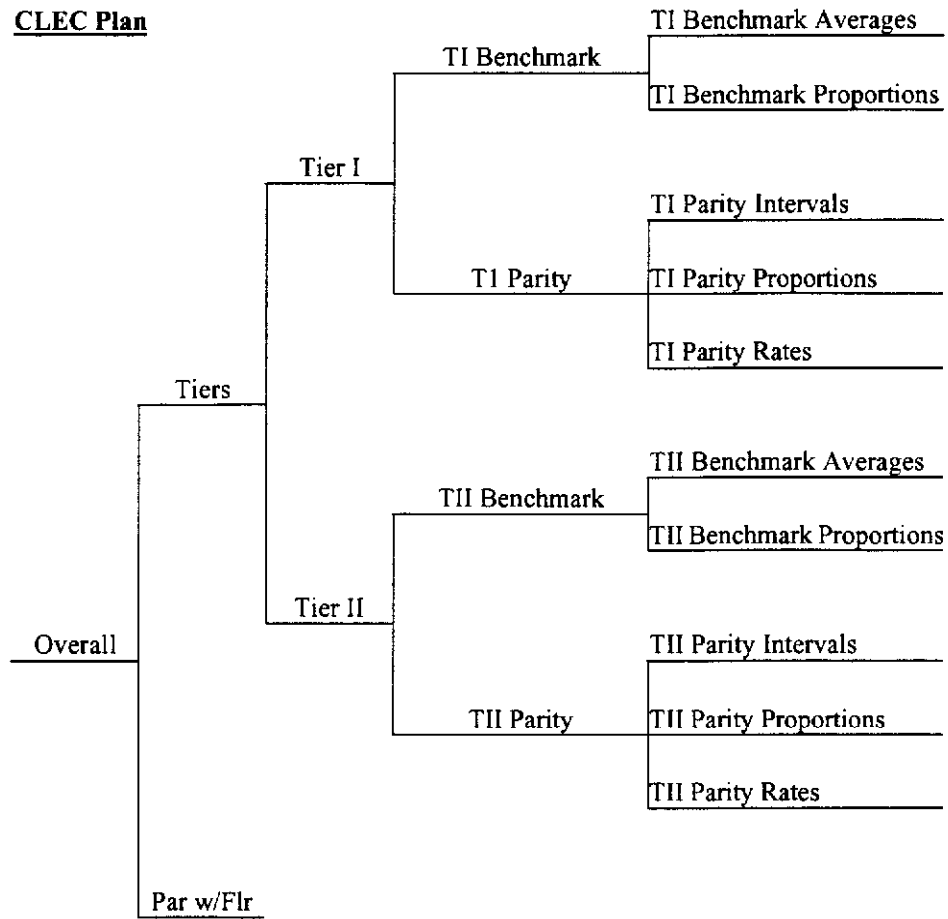
7   **JOINT CLEC PLAN?**

8   A.   The most efficient way to show the development of my analysis is using a

9   pictorial representation. This graph shows the organization of my analysis of both

10   plans. Moreover, the Texas Plan can be broken down into the same level of detail

11   as the CLEC Plan, with the exception of the calculation of remedies using parity
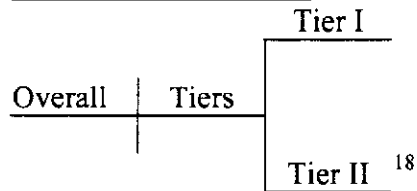
12   with a floor measures.[17]

13

---

[17] For the purposes of providing the most relevant information about the CLEC Plan, I provide
greater detail and analyses on this proposal than the Texas Plan.

Description of Analysis

CLEC Plan

```
                                                              TI Benchmark Averages
                                           TI Benchmark
                                                              TI Benchmark Proportions
                              Tier I
                                                              TI Parity Intervals
                                           T1 Parity         TI Parity Proportions
                                                              TI Parity Rates
                 Tiers
                                                              TII Benchmark Averages
                                           TII Benchmark
                                                              TII Benchmark Proportions
                              Tier II
                                                              TII Parity Intervals
                                           TII Parity        TII Parity Proportions
    Overall
                                                              TII Parity Rates


                 Par w/Flr
```

Ameritech/Texas Plan

```
                        Tier I
    Overall   Tiers
                        Tier II  [18]
```

5   My analysis will also compare results for both plans at the aggregate level, and

6

---

[18] TI = Tier I. TII = Tier 2. Par w/flr = Parity with a floor.

1   broken down into Tier I and Tier II levels.[19] In addition to the comparative

2   examination of both plans, I will provide more analyses and details of the results

3   using the CLEC Plan under certain statistical scenarios.

4 **Q.   WHAT IS THE RESULT OF YOUR OVERALL COMPARISON OF THE**

5   **CLEC AND TEXAS PLANS?**

6 A.   Although I suspected the difference in remedies due under the Texas Plan and the

7   Joint CLEC are substantial, my analysis indicates an even greater difference. This

8   great divergence in the two plans is particularly acute where, as has been the case

9   over the last year in Illinois, Ameritech provides poor wholesale and retail

10   services. The aggregate results are:

CLEC Plan Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	8225	1625	19.76%	$32,755.97	$53,228,451.08
NOV	8351	1590	19.04%	$35,135.10	$55,864,801.70
DEC	8540	1670	19.56%	$37,889.47	$63,275,412.90
TOTAL	25116	4885	19.45%	$35,285.29	$172,368,665.68

11

Parity with a Floor Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	696	363	52.16%	335%	$31,331.18	$11,373,217.79
NOV	699	350	50.07%	431%	$30,902.79	$10,815,977.81
DEC	711	344	48.38%	362%	$31,303.16	$10,768,286.10
TOTAL	2106	1057	50.19%	376%	$31,179.53	$32,957,481.70

12

Ameritech Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	7394	1257	17.00%	$1,378.74	$1,733,075.00
NOV	7576	1138	15.02%	$3,741.94	$4,258,325.00
DEC	7479	1064	14.23%	$5,914.85	$6,293,400.00
TOTAL	22449	3459	15.41%	$3,551.55	$12,284,800.00

---

[19] I have assumed a market penetration factor of 8 for the Tier II remedies.

1	The proxy produced a realistic overall failure rate of 20%, including both Tier I
2	and Tier II payments. While this failure rate seems shockingly high, it is actually
3	quite representative of Ameritech's dismal service quality. My analysis also
4	reveals:

- 5/6 Severity of failures was large enough to induce average remedies (both Tier I and Tier II in the mid to high $30,000s.

- 8/9 Total remedies of the Tiers came out to $50 to $60 million per month with a total over the 3 month period of over $172 million.

- 11/12/13 Failure rate shows no improvement over time but severity of failures get progressively worse over time as indicated by higher and higher average remedy per failed submeasure.

- 15/16/17 Due to small number of months covered in the proxy, no chronic override was employed in this calculation of the CLEC plan. Chronically poor service occurs when Ameritech fails a submeasure for more than three months.

- 19/20/21/22/23/24 The data presented to me had many submeasures that were repeated and/or aggregated as separate submeasures that also increased the number of submeasures subject to remedy. This was not how the data was requested, and has an effect on the remedies calculated under the proxy by overstating the amount of remedies. I estimate that the residual number of such repeats, after removal by hand of the majority, will not change the overall result by more then 10%.

- 26/27/28 Application of Parity with a Floor measures shows shocking and widespread failure from Ameritech. These remedies have the purpose of assuring a basic performance level for a small subset of critical submeasures.

- 30/31/32/33/34/35/36 More than half of the Parity with a Floor submeasures failed by an average severity of 376%. The reason for this shockingly high rate is Parity with a Floor submeasures have as a severity of failure parameter the percent difference between the Parity with a Floor benchmark and the actual performance. If the actual performance is more than twice as large as the Parity with a Floor benchmark, the failure severity is more than 100% for that measure. This is how we obtained such a large average failure severity.

- 38/39 This extremely large failure rate with high severity leads to remedies over $10 million per month with a total over the three month period of over $30 million.

- 41/42 Contrast these results with the Texas plan that shows a bit over 15% failure rate on a smaller set of submeasures.

1
2 • Each month shows improvement with October the worst month, even though
3   there were no Tier II remedies included.
4
5 • Remedies per submeasure increase steadily, but again note that October has no
6   Tier II remedies, as I show in greater detail below. Overall the use of Tier II
7   remedies on an analysis of so few months is so small and unrepresentative as to
8   be almost misleading. However, without it the plan only shows a small part of its
9   complex chronic failure structure.
10
11 • Overall the relatively miniscule remedy amounts estimated under the Texas Plan
12   are simply a cost of business for a company the size of SBC/Ameritech with such
13   a widespread failure rate.
14
15 • As I mentioned earlier, I was not presented by Ameritech the equations that
16   describe how these calculations were done and therefore cannot verify the
17   peculiar behavior of decreasing failure rate but increasing average remedy amount
18   per failed submeasure.
19
20 Q. **PLEASE DESCRIBE THE RESULTS OF YOUR ANALYSIS OF**

21 **ESTIMATED TIER I REMEDIES UNDER THE CLEC AND TEXAS**

22 **PLANS?**

23 A. My analysis of Tier I remedies payable under the Texas and CLEC Plans tracks

24 the overall results shown above. Thus, as is shown by the more detailed analysis

25 below, the Texas Plan results in remedies so small as to not incent the company to

26 provide adequate service to individual CLECs. This contrasts with the CLEC

27 Plan that rightfully provides for much more substantial remedies where poor

28 service is provided. The Tier I remedies are:

29

CLEC Tier I Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	7439	1508	20.27%	$17,786.18	$26,821,552.08
NOV	7548	1454	19.26%	$17,373.70	$25,261,359.62
DEC	7665	1507	19.66%	$17,618.35	$26,550,858.76
TOTAL	**22652**	**4469**	**19.73%**	**$17,595.38**	**$78,633,770.46**

30

43

Ameritech Tier I Analysis

Month	Submeasures		Failure Rate	Average Crit. z	Average Remedy	Total Remedy
	Touched	Failed				
OCT	6633	1102	16.61%	1.743	$1,572.66	$1,733,075.00
NOV	6785	971	14.31%	1.754	$2,545.96	$2,472,125.00
DEC	6676	882	13.21%	1.752	$4,211.79	$3,714,800.00
TOTAL	20094	2955	14.71%	1.750	$2,778.13	$7,920,000.00

1

2　　　• Average and overall remedies under the Ameritech plan are about 1/10 of the
3　　　　CLEC plan.

4

5　　　• The remedy results above show that under the CLEC plan there is a 20% failure
6　　　　rate as opposed to a 15% failure rate (k-table mitigation included) for Ameritech
7　　　　plan.

8

9　　　• The CLEC plan shows no improvement of Ameritech performance failure rate,
10　　　　while Ameritech plan shows substantial impovement.

11

12　　　• Chronicity is taken into account in the Ameritech analysis, but not in the CLEC
13　　　　analysis. This shows the lack of an incentive in the Texas Plan for Ameritech to
14　　　　improve service quality over time.

15

16　　　• Average critical value is 1.750 in the Ameritechplan, which corresponds to a
17　　　　confidence of 96%, not the 95% that has been promised. This means that on
18　　　　average at least 100 parity submeasures that did not fail under the test should
19　　　　have. At (Ameritech's) $3,000 per submeasure this alone amounts to an additional
20　　　　$300,000 missing as remedies.

21

22　　　• However, the k table was still used as if a 95% confidence was in play and a full
23　　　　5% of failed submeasures were taken back as due to random variation. Even
24　　　　though many of the failed submeasures were known to be chronic and severe
25　　　　failures. This is incorrect procedure that leads to over mitigation.

26

27　　　• Note that the number of submeasures touched remains relatively stable over time
28　　　　thus indicating that the number of CLECs in the market is not increasing.

29

30　　Q.　　**PLEASE DESCRIBE THE RESULTS OF YOUR ANALYSIS OF**

31　　　　**ESTIMATED TIER II REMEDIES UNDER THE CLEC AND TEXAS**

32　　　　**PLANS?**

1   A.   The results of my analysis of Tier II is even more striking than those for Tier I,

2   since here the layers upon layers of forgiveness built into the Texas Plan sbw

3   absolutely no Tier II remedies for October, and minimal remedies for November

4   and December. The actual numbers are:

CLEC Plan Tier II Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	786	117	14.89%	$225,699.99	$26,406,899.00
NOV	803	136	16.94%	$225,025.31	$30,603,442.08
DEC	875	163	18.63%	$225,304.01	$36,724,554.14
TOTAL	**2464**	**416**	**16.88%**	**$225,324.27**	**$93,734,895.22**

5

Ameritech Plan Tier II Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Crit. z	Average Remedy	Total Remedy
OCT	761	155	20.37%	1.700	$0.00	$0.00
NOV	791	167	21.11%	1.700	$10,695.81	$1,786,200.00
DEC	803	182	22.67%	1.700	$14,168.13	$2,578,600.00
TOTAL	**2355**	**504**	**21.40%**	**1.700**	**$8,423.52**	**$4,364,800.00**

6
7   •   Failure rates are higher here than they are for Tier I, for both the Ameritech and
8   CLEC plans. However, failure rate for Ameritech under the Texas plan is much
9   higher than the CLEC plan, even though a 1.70 (95.5% confidence) critical value
10   is used.
11
12   •   For the CLEC plan, Tier II is about half of the remedy. For Ameritech it is much
13   less than half, even though failure is widespread.
14
15   •   The Texas plan does not protect public interest because this data indicates
16   discrimination against the CLEC industry as a whole and only tiy remedies are
17   paid. This is supported by the Parity with a Floor calculation already shown
18   above.
19
20   •   Note also that in the CLEC plan average remedies are high (close to $250,000).
21   This means that not only is Ameritech failing at a high rate, failures are svere
22   and damaging to the industry.
23

1 Q.   **PLEASE DESCRIBE YOUR ANALYSIS OF ESTIMATED TIER I**

2   **REMEDIES WITH SEPARATE RESULTS FOR BENCHMARK AND**

3   **PARITY PERFORMANCE MEASURES UNDER THE CLEC PLAN?**

4 A.   The results of my analysis are:

Tier I Benchmark Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	1948	621	31.88%	$16,212.63	$10,068,042.12
NOV	2037	510	25.04%	$13,739.29	$7,007,038.42
DEC	1945	495	25.45%	$13,410.68	$6,638,288.06
TOTAL	5930	1626	27.42%	$14,583.87	$23,713,368.60

5

Tier I Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	5491	887	16.15%	$18,887.84	$16,753,509.96
NOV	5511	944	17.13%	$19,337.20	$18,254,321.20
DEC	5720	1012	17.69%	$19,676.45	$19,912,570.70
TOTAL	16722	2843	17.00%	$19,317.76	$54,920,401.86

6   • Breakdown between Parity and benchmarks shows that benchmarks are failing
7   much more often as a percent of the total.
8
9   • Although average remedies per failed parity submeasure are higher than perfailed
10   benchmark, the number of benchmarks is only about 1/3 that of the number of
11   parity submeasures.
12
13 Q.   **PLEASE DESCRIBE YOUR ANALYSIS OF ESTIMATED TIER I**

14   **REMEDIES WITH SEPARATE RESULTS FOR BENCHMARK AND**

15   **PARITY PERFORMANCE MEASURES UNDER THE CLEC PLAN?**

16 A. The results of my analysis are:
17

CLEC Plan Tier II Benchmark Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	113	25	22.12%	$247,511.56	$6,187,788.91
NOV	110	28	25.45%	$234,913.70	$6,577,583.53
DEC	113	27	23.89%	$236,118.01	$6,375,186.37
TOTAL	336	80	23.81%	$239,256.99	$19,140,558.81

CLEC Plan Tier II Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Remedy	Total Remedy
OCT	673	92	13.67%	$219,772.94	$20,219,110.09
NOV	693	108	15.58%	$222,461.65	$24,025,858.55
DEC	762	136	17.85%	$223,157.12	$30,349,367.77
TOTAL	**2128**	**336**	**15.79%**	**$222,006.95**	**$74,594,336.41**

- Tier II is showing similar behavior to Tier I, but failure rates are lower because of the test is more lenient. Ameritech should be passing these submeasures at a much higher rate. This is again indicating a high level of discrimination at the CLEC industry level.

- Note again the high average remedies per submeasure that indicates that failures are severe.

10 Q. **HAVE YOU PERFORMED ANY OTHER ANALYSES OF THE CLEC**

11 **PLAN UNDER USING DIFFERENT STATISTICAL STANDARDS?**

12 A. Yes I have. In order to provide the greatest amount of information to the

13 Commission, I also analyzed remedies due under the CLEC Plan, again separating

14 out parity and benchmark performance measurements for both Tier I and Tier II

15 in the following ways: (1) Tier I Average Benchmark Analysis; (2) Tier I

16 Proportion Benchmark Analysis; (3) Tier I Interval Parity Analysis; (4) Tier

17 Proportion Parity Analysis; (5) Tier I Rate Parity Analysis; (6) Tier II Average

18 Benchmark Analysis; (7) Tier II Proportion Benchmark Analysis; (8) Tier II

19 Interval Parity Analysis; (9) Tier II Proportion Parity Analysis; (10) and Tier II

20 Rate Parity Analysis. The results are:

CLEC Plan Tier I Average Benchmark Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	458	148	52.16%	-6.66	$23,121.90	$3,422,040.69
NOV	478	132	50.07%	-4.223	$21,956.19	$2,898,217.24
DEC	455	120	48.38%	-3.475	$21,735.03	$2,608,203.01
TOTAL	**1391**	**400**	**28.76%**	**-4.781**	**$22,267.67**	**$8,928,460.95**

47

CLEC Plan Tier I Proportion Benchmark Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	1490	473	31.74%	0.394	$14,050.74	$6,646,001.43
NOV	1559	378	24.25%	0.358	$10,869.90	$4,108,821.18
DEC	1490	375	25.17%	0.31	$10,746.89	$4,030,085.05
TOTAL	**4539**	**1226**	**27.01%**	**0.354**	**$11,873.68**	**$14,784,907.66**

CLEC Plan Tier I Interval Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	1333	341	25.58%	14.274	$18,580.50	$6,335,951.52
NOV	1351	350	25.91%	15.963	$20,139.30	$7,048,753.82
DEC	1392	401	28.81%	13.699	$19,805.71	$7,942,090.42
TOTAL	**4076**	**1092**	**26.79%**	**14.637**	**$19,515.59**	**$21,326,795.76**

CLEC Plan Tier I Proportion Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	3720	485	13.04%	8.288	$19,349.94	$9,384,722.23
NOV	3749	535	14.27%	9.037	$19,270.03	$10,309,467.12
DEC	3910	572	14.63%	9.301	$19,635.03	$11,231,239.32
TOTAL	**11379**	**1592**	**13.99%**	**8.883**	**$19,421.58**	**$30,925,428.68**

CLEC Plan Tier I Rate Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	438	61	13.93%	17.505	$16,931.74	$1,032,836.21
NOV	411	59	14.36%	22.852	$15,188.14	$896,100.26
DEC	418	39	9.33%	24.228	$18,954.90	$739,240.96
TOTAL	**1267**	**159**	**12.55%**	**21.458**	**$17,033.60**	**$2,668,177.43**

CLEC Plan Tier II Average Benchmark Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	28	3	10.71%	-0.585	$229,262.97	$687,788.91
NOV	28	5	17.86%	-0.591	$165,516.71	$827,583.53
DEC	29	4	13.79%	-0.297	$156,296.59	$625,186.37
TOTAL	**85**	**12**	**14.12%**	**-0.489**	**$183,369.79**	**$2,140,558.82**

1

1

CLEC Plan Tier II Proportion Benchmark Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	85	22	25.88%	-0.296	$250,000.00	$5,500,000.00
NOV	82	23	28.05%	-0.275	$250,000.00	$5,750,000.00
DEC	84	23	27.38%	-0.312	$250,000.00	$5,750,000.00
TOTAL	**251**	**68**	**27.09%**	**-0.295**	**$250,000.00**	**$17,000,000.00**

CLEC Plan Tier II Interval Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	191	39	20.42%	12.552	$223,316.02	$8,709,324.89
NOV	195	42	21.54%	23.959	$221,667.38	$9,310,030.10
DEC	224	58	25.89%	20.48	$223,484.67	$12,962,110.59
TOTAL	**610**	**139**	**22.79%**	**19.11**	**$222,850.93**	**$30,981,465.58**

CLEC Plan Tier II Proportion Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	443	46	10.38%	9.912	$217,897.65	$10,023,291.93
NOV	457	64	14.00%	10.591	$223,978.06	$14,334,595.70
DEC	500	73	14.60%	9.396	$223,651.29	$16,326,543.88
TOTAL	**1400**	**183**	**13.07%**	**9.949**	**$221,937.34**	**$40,684,431.51**

CLEC Plan Tier II Rate Parity Analysis

Month	Submeasures Touched	Failed	Failure Rate	Average Severity	Average Remedy	Total Remedy
OCT	39	7	17.95%	15.767	$212,356.18	$1,486,493.27
NOV	41	2	4.88%	5.782	$190,616.37	$381,232.75
DEC	38	5	13.16%	4.985	$212,142.66	$1,060,713.30
TOTAL	**118**	**14**	**11.86%**	**8.825**	**$204,733.76**	**$2,928,439.32**

2
3 • These tables complete my initial analysis of remedies under the proxy and shows
4 how the parity/benchmark submeasure for Tier I/II perform.
5
6 • Benchmarks and Parity Interval submeasures are the worst, for both Tier I and II,
7 as evidences by very high failure rates.
8

49

1

2 • Severity of failure is very high. Zscores exceeding 10 times the balancing critical

3 value are common for all sample sizes.[20]

4 Q. **CAN YOU SHOW AN EXAMPLE WHERE THE REVIEW THRESHOLD**

5 **WOULD APPLY?**

6

7 A. Yes, I can. The review threshold is reached when SBC/Ameritech incurs remedy

8 payments to CLECs and to the State in excess of 1/6 of 36% of net return in a

9 given month. In Illinois's case, 36% of net return is approximately $361 million.

10 If SBC/Ameritech's payments in a given month exceed 1/6 of $361 million, or

11 $60 million, a Commission review would begin.

12

13 For example, let's assume that there are 50 CLECs receiving remedy payments in

14 a given month. Let's also assume that the payments for the failing submeasure

15 are at the severe or chronic level ($25,000). Let's also assume that

16 SBC/Ameritech has chronically or severely failed 30 submeasures (n$25,000,

17 where n is assumed to be 8 in Illinois).

18

19 The Tier II payment would be $6,000,000 (30(8*25,000)). Let's then assume that

20 SBC/Ameritech chronically or severely failed 2250 submeasures, or roughly 45

21 submeasures for each of the 50 CLECs. The payments for both Tier I and Tier II

22 would then exceed $60 million ($62,250,000), and a Commission review of

23 Ameritech's poor performance would begin.

---

[20] The CLEC plan has adapted its procedure for benchmark averages. It was originally assumed that all such benchmarks would be converted to proportions. However, this has not been done, so a method based on a percent deviation from the benchmark standard has been employed. A 10% deviation is considered severe. Similar rules then apply for basic and Tier II submeasures.

1 Q. **WILL THE TRUNCATED Z DISTRIBUTION TO BALANCE A**

2   **MODIFIED Z TEST USED IN THE JOINT CLEC REMEDY PLAN**

3   **PRODUCE A BALANCED TEST"?**

4 A. Yes. I will provide below an example of a small sample size and a large sample

5   size to demonstrate my concern about small sample sizes for CLECs.

6

7   The truncated z statistic discussed in the Joint CLEC Remedy Plan, Attachment A

8   to my testimony, is a quantity that is derivable from data according to a procedure

9   we will describe below. When it is calculated it plays the role of a test score to be

10   compared to a balancing critical value to determine whether to declare

11   parity/disparity for a submeasure. We explain here how and why to compute this

12   truncated z score and also show that it reduces to the modified z score under the

13   provisions of the Illinois CLEC statistical proposal.

14

15   In studying detailed, actual performance data the statisticians from AT&T and

16   Ernst & Young (BellSouth's consultant) had as an objective to assure that each

17   submeasure was deeply disaggregated to prevent masking of poor performance in

18   one dimension of a measure by another. For example, by combining installation

19   times for pre-certified xDSL with those for manual T1 service, a large number of

20   complex T1 installations might easily mask the shorter times of precertified

21   xDSL installation. An ILEC could discriminate against CLECs selling xDSL by

22   lengthening wholesale installation times. Combined with the T1s, the overall

23   average installation time would insignificantly higher. The aggregated measure

1   could easily appear to be in parity, when in fact there was discrimination. To

2   prevent such anomalies, the statisticians devised a method that would require deep

3   disaggregation not only by service, but also down to the wire-center and even

4   time of month. In the state of Louisiana, where these deliberations took place, this

5   deep disaggregation led to a collection of over 4,000 submeasures (cells) per

6   CLEC. Each of these cells is then separately analyzed to determine its modified z

7   value.[21] Next, all cells with positive (better wholesale than retail) modified z score

8   have that modified z score reset to zero. This is the origin of the term

9   'truncation." Other cells, with negative modified z scores keep their values. A

10   weighted average of the cells contained within a pre-specified aggregated

11   submeasure is then performed.[22] Naturally the modified z scores of cells that have

12   been truncated do not contribute, thereby reducing the possibility of masking of

13   poor performance by good performance. The resulting weighted average of cells'

14   modified z scores is then compared to the calculated balancing critical value

15

---

[21] Most of these cells have sizes so small that permutation analysis needs to be performed in order to estimate the modified z score. Although this is a perfectly appropriate technique, and one that we recommend in the CLEC plan for the smallest sample sizes, it does lead to a heavier requirement on computational capability then the table lookup techniques that are appropriate for larger sample size.

[22] There remains some ambiguity regarding exactly how to do the weighted sum in the statistical method as proposed in Louisiana. Specifically, one must decide whether to keep the truncated cell points in the denominator of the weighted sum. The Illinois CLEC proposal does not suffer from this ambiguity because it does not propose an overly deep disaggregation but relies on the submeasures already agreed upon in State collaboratives.

1   appropriate for the aggregated submeasure, which fails or passes according to this

2   test. Finally, remedies are calculated.[23]

3

4   The above methodology is very general, and although it is sufficiently applicable

5   for BellSouth to adopt it, it can be reduced to a simpler form in Illinois that

6   captures many if not all the benefits. It is this reduced, simpler form that the

7   CLECs propose in this State. The first simplification that the Illinois CLECs

8   propose is that instead of performing a very (perhaps overly) deep disaggregation,

9   the final plan adopts the measure set and disaggregations already agreed upon in

10   Illinois. The CLECs believe that this level of disaggregation is sufficient to

11   prevent masking of poor performance in almost all cases, and there is thus no

12   need to go down to the wire center dimension, for example. *The CLEC plan*

13   *therefore takes the submeasure level in Illinois as the cell level.* Next, in order to

14   produce adequate incentive for Ameritech, the CLECs propose that remedies

15   generate at the submeasure level with no further aggregation or complexity

16   associated with per transaction calculations.[24] Therefore, each cell stands on its

17   own in the CLEC plan, and the truncated z statistic reduces to the modified z

18   score for each submeasure.

19

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[23] Much like in Illinois, at this point the agreement between the parties in Louisiana diverges. Thus, there is agreement on the statistical methodology, but not how to convert the statistics into remedial dollar amounts.
[24] We have repeatedly made the case that a transaction based remedy plan is unfair to the market whenever sample sizes are small. We furthermore suggest that a transaction based plan does not make a CLEC whole from discrimination because the per transaction remedies do not factor in consequential effects such as harm to good will or brand name, bundled customer revenues, and subsequent retraction of market activity by a CLEC, to name a few.

1   Finally, the CLEC plan adopts the balancing methodology by defining the

2   balancing also to occur at the submeasure cell level. This definition is perfectly

3   consistent with the spirit and letter of the statistical methodology and dictates a

4   direct parity comparison of the modified z score computed on a submeasure basis

5   to the corresponding balancing critical value.

6

7   The following portion of the answer describes the methodology for balancing the

8   error probabilities when the modified z statistic is used for performance measure

9   parity testing. There are four key elements of the statistical testing process:

10

11   1. the null hypothesis, H_0, that parity exists between ILEC and CLEC services,
12   2. the alternative hypothesis, H_a, that the ILEC is giving better service to its own
13   customers,
14   3. the Modified z test statistic, z, and
15   4. a critical value, c.

16
17   The decision rule[25] is

18
19   • If $z < c$ then   accept H_a.

20   • If $z \geq c$ then   accept H_0.

21
22   There are two types of error possible when using such a decision rule:

23
24   **Type I Error:** Deciding favoritism exists (accept H_a) when there is, in fact, no
25   favoritism (H_0 is true).

26
27   **Type II Error:** Deciding parity exists (accept H_0) when there is, in fact,
28   favoritism (H_a is true).

29
30   The probabilities of the two types of error are:

31
32   **Type I Error:** $\alpha = P(z < c \mid H_0)$.

33
34   **Type II Error:** $\beta = P(z \geq c \mid H_a)$.

---

[25] This decision rule assumes that the smaller a performance measure is, the better the service. If the opposite is true, then the decision rule should be reversed by using –z in place of z.

In what follows, we show how to find a balancing critical value z^*, so that $\alpha = \beta$.

The general form of the test statistic that is being used is

$$z_0 = \frac{\hat{T} - E(\hat{T} \mid H_0)}{SE(\hat{T} \mid H_0)}. \qquad (.1)$$

Where

$\hat{T}$ is an estimator that is (approximately) normally distributed,

$E(\hat{T} \mid H_0)$ is the expected value (mean) of $\hat{T}$ under the null hypothesis, and

$SE(\hat{T} \mid H_0)$ is the standard error of $\hat{T}$ under the null hypothesis

Thus, under the null hypothesis, z_0 follows a standard normal distribution.

However, this is not true under the alternative hypothesis. In this case,

$$z_a = \frac{\hat{T} - E(\hat{T} \mid H_a)}{SE(\hat{T} \mid H_a)}$$

has a standard normal distribution. Here

$E(\hat{T} \mid H_a)$ is the expected value (mean) of $\hat{T}$ under the alternative hypothesis, and

$SE(\hat{T} \mid H_a)$ is the standard error of $\hat{T}$ under the alternative hypothesis.

Notice that

$$\beta = P(z_0 > c \mid H_a)$$
$$= P\left(z_a > \frac{cSE(\hat{T} \mid H_0) + E(\hat{T} \mid H_0) - E(\hat{T} \mid H_a)}{SE(\hat{T} \mid H_a)} \right), \qquad (.2)$$

and recall that for a standard normal random variable z and a constant b, $P(z < b)$

$= P(z > -b)$. Thus,

$$\alpha = P(z_0 < c) = P(z_0 > -c) \qquad (.3)$$

1   Since we want $\alpha = \beta$, the right hand sides of (.2) and (.3) represent the same

2   area under the standard normal density. Therefore, it must be the case that

3

4
$$-c = \frac{cSE(\hat{T} \mid H_0) + E(\hat{T} \mid H_0) - E(\hat{T} \mid H_a)}{SE(\hat{T} \mid H_a)}.$$

5

6   Solving this for c give the general formula for a balancing critical value $z*$:

7

8
$$z* = \frac{E(\hat{T} \mid H_a) - E(\hat{T} \mid H_0)}{SE(\hat{T} \mid H_a) + SE(\hat{T} \mid H_0)} \qquad (.4)$$

9

10   Now, for example, the modified z statistic, z, for a mean measure is given by

11

12
$$z = \frac{\hat{T}}{s_1 \sqrt{1/n_1 + 1/n_2}}$$

13

14   where $\hat{T} = \overline{X}_1 - \overline{X}_2$ and subscripts 1 and 2 refer to ILEC and CLEC quantities,

15   respectively.

16

17   One possible set of hypotheses, that takes into account the assumption that

18   transaction are identically distributed within LECs, is:

19

20   H_0: $\mu_1 = \mu_2$, $\sigma_1^2 = \sigma_2^2$

21   H_a: $\mu_2 = \mu_1 + \delta_1$, $\sigma_2^2 = \lambda \sigma_1^2$, $\delta > 0$ and $\lambda \geq 1$.

22

23   Assuming that n_1 is large enough so that s_1 adequately approximates σ_1, we have

24

25      $E(\hat{T} \mid H_0) = 0$

26

27      $SE(\hat{T} \mid H_0) = \sigma_1 \sqrt{1/n_1 + 1/n_2}$

28

29      $E(\hat{T} \mid H_a) = -\delta_1$

30

31      $SE(\hat{T} \mid H_a) = \sigma_1 \sqrt{1/n_1 + \lambda/n_2}$

Substituting these values in equation (C.5) gives

$$z^* = \frac{-\delta}{\sqrt{1/n_1 + 1/n_2} + \sqrt{1/n_1 + \lambda/n_2}}$$

$$= \frac{-\delta\sqrt{n_1 n_2}}{\sqrt{n_1 + n_2} + \sqrt{\lambda n_1 + n_2}}$$

The preceding equations have indexed the alternative hypothesis by two parameters, λ and δ. While statistical science can be used to evaluate the impact of different choices of these parameters, there is not much that an appeal to statistical principles can offer in directing specific choices. Specific choices are best left to telephony experts. Still, it is possible to comment on some aspects of these choices:

Parameter Choice for λ. The parameter λ indexes an alternative to the null hypothesis that arises because there might be greater unpredictability or variability in the delivery of service to a CLEC customer over that which would be achieved for an otherwise comparable ILEC customer. Typically, there is little basis for choosing a value of λ other than 1, in which case the formula for z^* simplifies to

$$z^* = \frac{-\delta\sqrt{n_1 n_2}}{2\sqrt{n_1 + n_2}}$$

Parameter Choice for δ. The parameter δ is much more important in the choice of the balancing point than was true for λ because it directly indexes the difference in

57

1   average service and is a measure of performance differences that are material. The

2   CLEC plan uses a value of δ equal to 0.25.

3 Q. **PLEASE EXPLAIN THE JOINT CLEC PLAN'S USE OF A DELTA**

4   **PARAMETER, AND WHETHER IT ADDRESSES HOW LARGE**

5   **DIFFERENCES IN PERFORMANCE MUST BE BEFORE THEY HAVE AN**

6   **IMPACT ON CONSUMERS.**

7 A. When performing a statistical parity test, such as the kind envisioned by all parties

8   for the purpose of gauging compliance and calculating consequences for

9   discrimination, a number of elements ae necessary. There is broad agreement that

10   a one-sided simple hypothesis test based on a sample test statistic, such as the

11   modified z score, and a critical value for the statistic is appropriate. The test

12   declares, for each submeasure, whether there is sufficient evidence to reject the null

13   hypothesis in favor of an alternative. Also agreed is that the null hypothesis is the

14   one that assumes that parity wholesale service is provided by the ILEC to the

15   CLEC's wholesale customers relative to the service the ILEC provides to its own

16   retail customers. Strictly speaking in order to properly execute the test, a particular

17   alternative hypothesis needs to be specified. The specific alternative helps define

18   the critical value of the test. That is to say, if we reject the null hypothesis (parity)

19   what do we accept in its stead? The reason this is important is that if the alternative

20   hypothesis is not too different than the null (just mildly out of parity), a given

21   sample of data (and test statistic) is more likely to reject the null in favor of the

22   alternative then if the alternative is very different from the null (severely out of

1   parity). The specification of the alternative hypothesis is thus critical to fully

2   defining the statistical test.[26]

3

4   AT&T and Ernst & Young (RBOC BellSouth's consultant) have discovered, after

5   viewing actual ILEC and CLEC data in Louisiana under a nondisclosure agreement,

6   that a reasonable family of alternative hypotheses can be defined in terms of a

7   continuous parameter that they have called delta (d). The quantity d may be thought

8   of as the shifted difference between the distribution that represents parity and the

9   distribution that just represents disparity. Values of d near zero represent alternative

10   hypotheses mildly removed from parity. As the value of delta increases the

11   alternative monotonically increases its dissimilarity from parity. According to the

12   statisticians, the value of d should be chosen such that the alternative represents a

13   "material difference" from parity. How this material difference is established cannot

14

---

[26] The Ameritech Texas-style plan attempts to circumvent the definition of the alternative by instead defining a fixed value of confidence and corresponding critical value. Unfortunately this methodology leads to inaccuracies and biases in the test because the number of data points in the sample is not under our control. Measures with small numbers of data points inherently have smaller values of associated confidence, and therefore the null (parity) hypothesis will more likely be accepted under a fixed critical value scenario. Conversely, tests with large numbers of data points will have increased likelihood of rejection of the null. These declarations may depend more heavily on the number of data points observed than on the actual performance and therefore defeat the purpose of the test, which is to determine whether the ILEC is providing substantially the same performance to the wholesale customers as to the retail customers. With a fledgling market, small CLEC, deeply disaggregated metric set, a low population geographic region, or nascent service, the number of transactions (data points) per submeasure will be small and therefore a fixed value of confidence unfairly favors the ILEC by enhancing the probability of acceptance, in an unbalanced way, of the null hypothesis for the submeasures.

1   be determined from theoretical Statistical argument. However, the implications of

2   any choice can be assessed quantitatively.[27]

3
4   Consider the following table:
5

Probability of CLEC failure

P(ILEC)	d				
	0.00	0.10	0.25	0.50	1.00
1.0%	1.0%	2.6%	5.0%	11.8%	31.9%
5.0%	5.0%	8.1%	11.8%	21.0%	44.0%

6
7
8   This table is calculated by assuming that an ILEC service system is producing

9   performance measure data points drawn from an underlying normal distribution for its

10   retail customers and a shifted normal distribution of the same measure for the CLEC

11   wholesale customers.[28] The table helps us understand how much of a shift of the

12   distribution is material. The magnitude of the shift is indexed by d, the number of

13   standard deviations (worse) the shift of the wholesale mean is from the retail mean. One

14   way of estimating which value of d is appropriate is to consider value of the measure on

15   the retail distribution for which 1.0% of retail customers get worse service; P(ILEC) =

16   1.0%. If the wholesale distribution is the same, that is in parity, (i.e., d = 0.00), then

17   1.0% of the wholesale customers will also get the same or worse service as that measure

18

---

[27] Strictly speaking a different value of delta should be chosen for each submeasure, but this would be very time consuming. A universal choice for all submeasures, although not perfect, would be more accurate than a fixed confidence test because such a test not only also requires a different confidence value for each submeasure but also requires a different value for different sample sizes. There is no principle for determining either of these in the Ameritech Texaslike plan. This plan therefore constrains us to suffer with resulting inaccuracies and biases

[28] Similar but non-normal distributions will give similar table entries. An arcsine square-root transformation has also been performed to stabilize the variance of the distribution.

1   value. The upper left-hand number in the box in the table indicates this. If we move to the

2   right and consider a value of $d = 0.10$, then the wholesale distribution is somewhat worse,

3   which leads to 2.6% of the wholesale customers receiving the same or poorer service than

4   the worse 1% of the retail customers. Still greater shifts to $d = 0.25$ and higher lead to

5   larger probabilities of wholesale customers getting the same or worse service as the worst

6   1% of retail customers. At a shift of $d = 1.00$, a very large 31.9% of wholesale customers

7   will get the same or worse service as the worst 1% of retail customers. A corresponding

8   row is computed for the worst 5% of retail customers. In this row, for example, a $d = 0.25$

9   leads to 11.8% of wholesale customers have the same or worse service as the worst 5% of

10   retail customers. This chart has enabled AT&T business planners to determine that a $d <$

11   0.25 is required to give the firm a reasonable opportunity to compete, and therefore such

12   a value of 0.25 or less could characterize a "material difference" for the purposes of

13   defining an alternative hypothesis for the parity test.

14

15   The value of d is incorporated into the calculation of remedies by performing a balancing

16   of the type 1 and type 2 error probabilities. This calculation is the fairest way known to

17   take into account a material difference and at the same time recognize that the number of

18   data point observations taken per submeasure, although accurate as audited, is

19   uncontrolled.[29] In order to understand this balancing procedure, it is necessary to study

20

---

[29] The number of data points depends on such business factors related to market openness, strategic marketing, and vendor capability to name a few. Therefore, it is very unlikely that anyone can control the "invisible hand" that creates and collects the data points.

1 briefly the properties of a statistical test of parity. For any given submeasure, there is an

2 actual state of parity or disparity that exists. Based on data collected from this actual

3 state, the test is performed. However, random variation in the data can lead to erroneous

4 declaration of the test. After all, only a finite number of data points are taken and they

5 could come on a particularly bad or good day for the process. Therefore, consider the

6 table below:

| | | Actual State of Performance Submeasure: | |
		Parity	Disparity
Declaration of	Parity	Correct Declaration	Type II Error
Statistical Test:	Disparity	Type I Error	Correct Declaration

7

8 If the test declaration is one of parity and the actual state of the submeasure is also parity,

9 then the declaration is correct. Similarly, if the declaration is one of disparity, and the

10 actual state is one of disparity, again the test has succeeded correctly. However, due to

11 random variation the declaration could be in error in two different ways: a declaration of

12 disparity can ensue even though parity is the actual state, hence a type 1 error; a

13 declaration of parity is calculated even though the actual reality is one of disparity, hence

14 a type 2 error. Both types of errors can happen and may have sizable probability

15 depending on the number of data points and the (material) difference from parity of the

16 alternative hypothesis.[30]

17

---

[30] This fact exposes another important weakness in the use of a fixed confidence methodology such as proposed in the Ameritech Texas-like plan. This proposed statistical method not only fixes confidence but *de facto* fixes the type 1 error probability (at less than 5% as it turns out). Moreover, the type 2 error probability depends on this fixed type 1 error value and the number of data points collected. However, as we have noted the number of data points is determined by business factors out of anyone's control. Therefore, the type 2 error probability varies considerably and uncontrollably each month, for each submeasure and for each CLEC; the rate of this variation also increases as the magnitude of the type 1 error probability decreases. This circumstance disproportionately favors Ameritech at the expense of the overll accuracy of the tests. A fixed type 1 error methodology is often discussed in idealized textbook cases or more aptly for data collection in controlled experiments. For such controlled experiments a fixed type 1 error probability is properly assumed, sufficient data points are then taken to bring the type 2 error to any reasonable value, usually less than or equal to the type 1 error.

1
2 To deal with these errors in an even handed way, the CLEC proposed statistical

3 methodology enables the calculation of the appropriate critical value for the test, which

4 sets the type 1 error probability equal to the type 2 error probability for the alternative

5 hypothesis described by the value of d. This balancing critical value may be shown to

6 equal

7

8 $$z^* = -\frac{\delta\sqrt{n_{ILEC}n_{CLEC}}}{2\sqrt{n_{ILEC}+n_{CLEC}}}.$$

9
10
11 Note that the balancing critical value, z^*, depends on the materiality, d, the number of

12 retail data points, n_{ILEC}, and number of wholesale data points, n_{CLEC}. The table below

13 shows for $d = 0.25$ and very large retail sample size, the calculated critical value z^*, for a

14 small wholesale sample of 20 and a large wholesale sample of 1,000.[31] Recall that the

15 type 1 and type 2 error probabilities are equal, and are easily calculated, in both cases.

16

d	n_{ILEC}	n_{CLEC}	z^*
0.25	100,000	20	-0.56
0.25	100,000	1,000	-3.95

17
18 It is to this simply calculated balancing critical value, not a fixed value, that the modified

19 z score is compared in order to declare parity/disparity. Furthermore, the balancing

20 critical value represents a natural scale for severity of failure. Therefore, the CLEC

21 proposal appropriately calculates remedy amounts as a function of the modified z score

22 expressed relative to the balancing critical value:

---

[31] It is easy to see that in neither balancing case is the critical value equal to– 1.65, the fixed critical value of the Ameritech Texas-like plan. Furthermore, if the submeasures are dominated by small sample sizes, then most critical values need to be closer to zero (larger) than– 1.65 in order to balance random error probabilities.

1

2
$$(z/z^*) = \frac{\delta(x_{CLEC} - x_{ILEC})}{2\sigma_{ILEC}}.$$

3

4 Here x_{ILEC} is the sample mean of the retail performance data points, x_{CLEC} is the sample

5 mean of the wholesale performance data points, and s_{ILEC} is the sample standard

6 deviation of the retail performance data points. Note that the resulting expression has no

7 explicit dependence on the sample sizes and so its value will not change when sample

8 size does. Only the sample means and retail standard deviation affect the value.[32]

9 For each tier 1 parity measure and CLEC, when the quantity (z/z^*) is greater than unity,

10 remedies are due the CLEC according to the formula in the plan. For tier 2 parity

11 measures in which CLEC aggregated data is used, when (z/z^*) is greater than 5/3,

12 remedies are due the State according to essentially the same formula. These tier 2

13 amounts differ from the tier 1 amounts in that they are multiplied by the market

14 penetration factor, n. As indicated in the Louisiana statisticians joint filing, similar

15 balancing critical values and severity variables can be defined for measures expressed as

16 proportions, percentages, rates, and ratios.

17 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

18 A.   As can be seen from my testimony, as well as that of my colleagues Ms. Moore

19   and Mr. Cox, the Joint CLEC Remedy Plan is a robust, complete, statistically

20   sound plan. The CLEC Plan provides for the payment of remedies in those

21   circumstances where Ameritech provides inadequate wholesale services to

22   CLECs. These payments are more than "a cost of doing" business, particularly

---

[32] With this simple measure of severity of failure, there is no need to go through the uncertainty and complexity of defining dollar amounts for each different type of transaction, for each tier, and for each month of failure as is necessary in the Ameritech Texas-like plan.

1		where poor service is provided. In stark contrast to this is the Texas Plan, which
2		calls for the payment of minimal remedies to CLECs and the State of Illinois,
3		even in those circumstances where poor service is offered. I urge the Commission
4		to adopt the CLEC Plan, and offer the correct incentives to Ameritech to not use
5		its provision of poor wholesale services as a way of defeating competitive entry.
6	Q.	**DOES THAT CONCLUDE YOUR TESTIMONY?**
7	A.	Yes.
8		

Attachment A

CLEC PROPOSED REMEDY PLAN

FOR

ILLINOIS

MARCH 12, 2001

SPONSORED BY:

ASSOCIATION OF COMMUNICATIONS ENTERPRISES, f/k/a
TELECOMMUNICATIONS RESELLERS ASSOCIATION
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MCLEODUSA TELECOMMUNICATIONS SERVICES, INC.
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TCG CHICAGO
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WORLDCOM, INC.
XO ILLINOIS, INC.

I. Introduction

The competitive local exchange carriers ("CLECs") in Illinois participating in the Per formance Measure Collaboratives have agreed to present the Illinois Commerce Commission ("Commission") with a compromise performance remedy plan. Although each CLEC has its own recommended plan, the parties have determined that the following compromise pl an would incorporate those provisions the Commission has ordered, as well as provide the proper remedy for SBC/Ameritech to provide Illinois CLECs with adequate operational support services.

The CLECs intend to offer this plan in Indiana, Michigan, Ohio, and Wisconsin, as well as Illinois. The CLECs believe that a remedy plan must take effect prior to 271 application and approval to enforce SBC/Ameritech's market opening requirements under the Telecommunications Act of 1996, Section 251.

A. Prerequisites for Performance Remedies

In order for a Performance Remedy Plan to be effective, performance measures that establish the minimum acceptable performance reporting requirements must be in place. In Illinois, in Docket No. 98-0555, the Commission ordered SBC/Ameritech to use the SBC Texas performance measures as a starting point The collaborative has been meeting for many months, and in conjunction with progress in other state collaboratives, an agreement on the measures has occurred. In a joint motion filed with the Commission on February 5, 2001 SBC/Ameritech and the CLEC participants in Docket No. 01 -0120 proposed final baseline performance measurements to be used in SBC/Ameritech's OSS 3 [rd] Party Test.[1]

---

[1] The CLECs agree that this should be the initial measurement to be used in the remedy plan. Additionally, Time Warner Telecom advocates that equivalent high capacity services (also known as special access services) be included in the performance measurements and associated remedies. If performance measurements for special access services and any associated penalties were included for in the remedy plan, it would specifically meet the Commission's principle that requires that a remedy plan not discriminate against CLECs based on their mode of entry.

B. General Principles

The FCC highlighted in its first approval of a 271 application (Bell Atlantic-New York) general principles for a successful performance remedy plan. The CLECs compromise plan embraces the FCC's pillars of an effective remedy. Such a plan must include:

- Potential liability that provides a meaningful and significant remedy to comply with the designated performance standards;
- Clearly-articulated, pre-determined measures and standards, which encompass a comprehensive range of carrier-to-carrier performance;
- A reasonable structure that is designed to detect and sanction poor performance when it occurs;
- A self-executing mechanism that does not leave the door open unreasonably to litigation and appeal;
- And reasonable assurances that the reported data is accurate.
- In addition to the FCC's well articulated criteria, the CLECs'compromise plan also reflects the following attributes of an effective remedy plan:
- Remedy payments increase on a per measure basis with the severity of the substandard performance and the duration of substandard performance.
- Remedies dynamically adjust to CLEC entry strategies and market size. Per measure additional remedies for chronic and severe failures, ensure that the remedies are right -sized to motivate the ILEC to fix rather than ignore the operational issues causing the disparity in performance.

II. Remedy Plan Structure

Remedies should be based on the expected financial gain to SBC/Ameritech-Illinois from impeding competition by providing sub-standard service to CLECs.

A. Remedy Cap

A review threshold for total remedies should be set no less than the FCC's recommendation of 36 percent of "Net Revenue," or $361 million for SBC/Ameritech-Illinois (see Table below for calculations). However, in light of the post-271 remedial actions of the FCC and New York Public Service Commission that raised the penalties for which Bell Atlantic New York was subject to 44 percent of net revenue, the CLECs recommend an initial review threshold of 44 percent or $441 million per year. If a remedy cap is established exceeding the review threshold, its value should be based on an economic and financial analysis of the expected financial gain to SBC/Ameritech-Illinois from deterring competition, adjusted for the probability of detection and punishment inherent in the performance plan. (See Hubert & Lehr). The CLEC plan does not propose an absolute remedy cap because such a cap reduces the effectiveness of the remedy plan with no offsetting benefits. It also allows SBC/Ameritech to calculate its total liability and limit it to a cost of doing business to maintain monopoly power.

Data for Illinois from ARMIS 43-01 (1999)
(Downloaded from FCC Web Site: http://www.fcc.gov/ccb/armis/)

Year	Company Name	Row_#	Row_Title	Total_b	State_g	Interstate_h
1999	Illinois Bell	1090	Total Operating Revenues	4,322,326	3,071,054	963,308
1999	Illinois Bell	1190	Total Operating Expenses	2,625,418	1,783,582	520,233
1999	Illinois Bell	1290	Other Operating Income/Losses	-1,560	-1,074	-339
1999	Illinois Bell	1390	Total Non-operating Items (Exp)	126,625	59,615	-60
1999	Illinois Bell	1490	Total Other Taxes	175,680	135,459	38,229
1999	Illinois Bell	1590	Federal Income Taxes (Exp)	493,559	359,726	132,130
1999	Illinois Bell	1915	Net Return	N/A	N/A	272,438

FCC's Net Return Calculation*

		Net Return	36% Net Return	44% Net Return
Illinois Bell	"Net Return"	1,004,036	361,453	441,776
Illinois Bell	75% Probability Adjustment		481,937	589,034

*Calculations are based on FCC NY 271 Order at ft. 1332: "To arrive at a total "Net Return" figure that reflects both interstate and intrastate portions of revenue derived from local exchange service, we combined line 1915 (the interstate "Net Return" line) with a computed net intrastate return number (total intrastate operating revenues and other operating income, less operating expenses, non-operating items and all taxes)." Following the FCC's guidelines, the 'Net Return' is [272438+3071054+ -1074 - (1783582+59615+135459+359726)]= $1004036

B. Remedy Tiers

1. Tier I is paid to individual CLECs for poor performance received by each CLEC. Tier II is paid to the State of Illinois for poor performance delivered to the aggregate CLEC community. Tier I consequences help to ensure that harmed CLECs can remain viable in the market despite the inferior service; Tier II remedies redress systemic barriers to competition and ensure that remedies reach appropriate incentive levels.

2. While statistical tests are used to detect discrimination for parity measures (those where service levels provided to CLECs can be compared to the levels provided to retail customers or to SBC/Ameritech's affiliate, which ever is better), levels of remedies are based on actual differences in performance, as measured by collected data and sample size. Any miss of a benchmark measure (those where there is no comparable retail or affiliate analogue for comparison) would invoke a remedy that likewise would increase by a relative percentage range by which the benchmark is missed. Those measures that require parity comparisons and those that require benchmarks have been determined in the agreed measurements submitted to the Commission for approval on February 5, 2001 in Docket No. 01-0120.

   The 1996 Telecommunications Act ensures that ILEC treatment of CLECs is not on ly non-discriminatory, but also "just and reasonable." Service below the Commission's end user standards is not reasonable and the CLECs outline a plan to address this issue below:

C. Parity with a Floor

Proposal:

Periodically, SBC/Ameritech's own pe rformance data for Illinois shows that they provide inferior service to both its wholesale and retail customers. Most states have employed

minimum standards of performance for retail customers, and when SBC/Ameritech fails to meet these minimum service levels, it causes the CLEC to be in violation of the state regulation as well. Although these service standards have been ordered by the states, they do not appear to have provided an adequate incentive for SBC/Ameritech to improve their performance in a consistent timely fashion. In addition to this, the states have a limited number of measures with standards as compared to the new proposed wholesale measures as being developed jointly by CLECs and SBC/Ameritech throughout the SBC/Ameritech region.

This failure to meet a state's minimum required service level is of significant concern to CLECs because it causes harm in multiple ways -- (a) the CLEC customer's frustration, which rightfully should be directed at SBC/Ameritech, is aimed at the CLEC, leading many times to loss of that customer; (b) the wrongfully placed ill-will against any particular CLEC often balloons into mistrust of all new competitors by the harmed customers and the many others with which he/she shares the poor service story; (c) CLECs, as telecommunications providers in Illinois may be held responsible for the violation of regulations through fines or credits and waivers to customers; and (d) the public interest calls for regulators to promote choice between good quality, not equally poor quality service providers. Even beyond the limited number of services for which retail end user standards exist, some performance areas are so critical, such as prompt restoral of high capacity loops for the business customers whose livelihoods depend on them, that minimum acceptable performance intervals are also required.

Additionally, on occasion, some CLECs have tried to validate SBC/Ameritech provided data against their own internal reporting and found the gaps to be even greater than what is indicated.

Due to these concerns, the CLECs propose the "Parity with a Floor" concept to be put in place as a backstop for key measures where parity is used as the performance standard. CLECs view this proposal as a means to obligate SBC/Ameritech to provide a minimum level of service to all customers and to motivate SBC/Ameritech to improve upon that base

level wherever possible. For these key measures, parity will be the primary performance standard, however, for the sake of both retail and wholesale customers; parity must be at a minimum level to be considered as reasonably adequate service. Simply stated, parity of poor performance is still poor performance.

Key Indicators:

Out of several parity measures, only 17 measures, along with their corresponding sub-measures will be held to the 'Parity with a Floor" concept. These 17 represent high customer impact, along with being business critical. The 17 measures are as follows:

PM #27 - Mean Installation Interval

PM #28 - Percent Installations Completed within 'X" days

PM #29 – Percent Ameritech Caused Missed Due Dates

PM #35 – Percent of Trouble Reports within 30 days of Installation.

PM #38 – Percent Missed Repair Commitments

PM #39 – Receipt to Clear Duration

PM #40 - Percent of Out of Service Intervals < 24 hours.

PM #41 – Percent Repeat Trouble Reports – POTS

PM #55 - Average Installation Interval

PM #55.1 - Average Installation Interval – DSL

PM #56 - Percent Installations Completed within 'X" days.

PM #58 – Percent Ameritech Caused Missed Due Dates

PM #59 – Percent of Trouble Reports within 30 days of Installation.

PM #67 – Mean Time to Restore

PM #68 – Percent of Out of Service (OOS) < 24 hours.

PM #69 – Percent Repeat Reports

PM #117 – Percent NXXs Loaded and Tested Prior to Effective Date

- **Floors:**

The following table represents the proposed "floor" for each respective measure:

Measure #:	Measure:	Floor:	Source:
PM #27	Mean Installation Interval	≤ 2.42 Business days	PSCW Order, 05-TI-248, 2/21/00 Ameritech Price Regulation Standards
PM #28(a)	Percent Installations Completed within 3 Days – No Field Work	Suggest 90% within 3 business days.	A review of SBC's historical data across the various states indicates best performance in IN & OH. WI, MI, & IL are very bad with ranges of 34% to 100%. That's way too big a spread!
PM #28(b)	Percent Installations Completed within 5 Days – Field Work	≥ 90% within 5 Business Days.	Ohio MTSS Standards @ http://www.puc.state.oh.us/ohioutil/Telecommunications/MTSStandards.pdf
PM #29	Ameritech Caused Missed Due Dates	≤ 10%	ORR Admincode @ http://www.state.mi.us/webapp/orr/admincode.asp?AdminCode=Single&Admin_Num=48400001&Dpt=CI&RngHigh=
PM #35	Percent of Trouble Reports within 10 Days of Installation	≤ 5%	Internal Resources
PM #38	Percent Missed Repair Commitments	< 1%	LCUG Service Quality Measurements v7.0
PM #39(a)	Receipt to Clear – Out of Service Troubles	≤ 14.56 hours	PSCW Order, 05-TI-248, 02/21/00 Ameritech Price Regulation Standards
PM #39(b)	Receipt to Clear – Non - Out of Service Troubles	≤ 36 hours	ORR Admincode @ http://www.state.mi.us/webapp/orr/admincode.asp?AdminCode=Single&Admin_Num=48400001&Dpt=CI&RngHigh=
PM #40	Percent Out of Service Intervals < 24 Hours	>=95%	Common Industry Standard
PM #41	Percent Repeat Trouble Reports	<= 1%	LCUG Service Quality Measurements v7.0
PM #55	Average Installation Interval	<= 4 Business Days	CLEC Internal Resources
PM #55.1	Average Installation Interval - DSL	<= 4 Business Days	CLEC Internal Resources
PM #56	Percent Installations Completed within "X"	<Open for discussions>	<Open for discussions>

	Days		
PM #58	Percent Ameritech Caused Missed Due Dates	<=10%	CLEC Internal Resources
PM #59	Percent of Trouble Reports within 30 days of Installation	<=5%	Mirror of POTS
PM #67	Mean Time to Restore	<=8 hours	CLEC Internal Resources
PM #68	Percent of Out of Service (OOS) < 24 Hours	>=95%	Mirror of POTS
PM #69	Percent Repeat Reports	<=1%	Mirror of POTS
PM #117	Percent NXXs loaded and Tested Prior to Effective Date.	100% by LERG effective date.	LERG is an established industry process that all carriers are to be following.

- **Example:**

  Measure #39 Receipt to Clear Duration – Out of Service Troubles.

  If SBC/Ameritech, on average, cleared Out of Service Troubles in 14 hours for their retail customers, and cleared them in 13 hours for the CLEC's customers, SBC/Ameritech not only provide parity, but also within the "floor". SBC/Ameritech met its obligation.

  If SBC/Ameritech, on average, cleared Out of Service Troubles in 37 hours for their retail customers, and cleared them in 36 hours for the CLEC's customers, SBC/Ameritech indeed provided parity, but parity in itself represented unacceptable service. SBC/Ameritech should be subject to appropriate action.

- **Implementation:**

  CLEC's acknowledge that in the areas where SBC/Ameritech is providing inferior service to its customers, that dramatic improvement can not happen over night. With that, CLEC's propose allowing Ameritech/SBC a 90 day grace period to identify, address and correct the root cause of their poor performance before being subject to any remedy implications.

- **Remedies:**

SBC/Ameritech will be subject to per measure remedies outlined in the table below:

Performance	Remedy amount per measure per CLEC
Floor or better	$0
Up to 10% worse than Floor	0.00025% of "Net Revenue" for SBC/Ameritech for the applicable state
10.01% - 20% worse than Floor	0.00050% of "Net Revenue" for SBC/Ameritech for the applicable state
20.01% - 30% worse than Floor	0.00075% of "Net Revenue" for SBC/Ameritech for the applicable state
30.01% - 40% worse than Floor	0.001% of "Net Revenue" for SBC/Ameritech for the applicable state
40.01% - 50% worse than Floor	0.0015% of "Net Revenue" for SBC/Ameritech for the applicable state
50.01% - 60% worse than Floor	0.002% of "Net Revenue" for SBC/Ameritech for the applicable state
60.01% - 70% worse than Floor	0.0025% of "Net Revenue" for SBC/Ameritech for the applicable state
70.01% - 80% worse than Floor	0.003% of "Net Revenue" for SBC/Ameritech for the applicable state
80.01% - 90% worse than Floor	0.0035% of "Net Revenue" for SBC/Ameritech for the applicable state
90.01% - 100% worse than Floor	0.004% of "Net Revenue" for SBC/Ameritech for the applicable state
Greater than 100% worse than Floor	0.005% of "Net Revenue" for SBC/Ameritech for the applicable state

- **Remedy examples/calculations:**

Examples listed below are using Data for Illinois from ARMIS 43-01 (1999) - (Downloaded from FCC Website: http://www/fcc/gov/ccb/armis/) 1999 Net Return=$1,004,036,000

Ex #1: SBC/Ameritech-Illinois, on average clears Retail customers Out of Service troubles in 18 hours, and clears CLEC "X" Out of Service troubles in an average of 17 hours. Ameritech provided parity to both retail and wholesale customers; however, parity did not meet the floor.

Using the calculation, and rules mentioned above, SBC/Ameritech would be required to pay the State of Illinois $5,020. (Using 17 hours in this example, you take 2.44 (17 hours minus the floor of 14.56 = 2.44) divided by the floor of 14.56 hours and get 16.8%. [(17 - 14.56)/14.56]=16.8%. 16.8% falls in the category of 10.01% - 20% worse than floor, so the remedy amount is the corresponding $5,020.

Ex #2: SBC/Ameritech-Illinois misses the floor by 15% for 10 sub-measures for 10 CLECs. SBC/Ameritech-Illinois would pay the state $502,000. (10 sub-measures multiplied by 10 CLECs multiplied by $5,020) or (10x10x$5,020=$502,000).

Ex #3: SBC/Ameritech-Illinois misses the floor by 25% for 10 sub-measures for 15 CLECs. SBC/Ameritech-Illinois would pay the state $1,129,500. (10 sub-measures multiplied by 15 CLECs multiplied by $7,530) or (10x15x$7,530=$1,129,500).

- **Payments:**

    Due to both the wholesale and retail customers are affected by Ameritech/SBC's poor performance, 100% of the remedy monies shall be paid to the respective State suffering the poor performance. No monies derived from this 'Parity with a floor" shall be paid to the CLEC's. The remedies shall be made payable via a check. The CLECs propose that the proceeds from these remedies be used for enforcement and customer education of interconnection and wholesale and retail performance.

- **Gap Closure:**

    In the event that SBC/Ameritech is performing greater than 10% worse than any given Floor, SBC/Ameritech must provide a Gap Closure plan.

    A "Gap Closure Plan" will involve a detailed plan of action that SBC/Ameritech has in place to correct the performance.